REMARKS

This responds to the Final Office Action mailed on July 9, 2008. Reconsideration is respectfully requested.

Claims 28 and 31 are amended, no claims are canceled, and no claims are added; as a result, claims 28 – 33 remain pending in this application. Claims 1 – 27 were previously cancelled.

§103 Rejection of the Claims

Claims 28-33 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lee (U.S. Publication Number 2002/0175294) in view of Dai (U.S. Publication Number 2003/0230728).

Applicant's claim 28 is directed to standoff bioagent detection system that includes a detector and a controller. The controller is configured to initially cause a plurality of laser diodes to generate a range of ultraviolet wavelengths. When the detector detects that a fluorescence level of an aromatic protein resulting from the range ultraviolet wavelengths exceeds a threshold, the controller is further configured to alternately address selected pairs of the laser diodes to alternately generate first and second ultraviolet wavelengths by ***sequentially pulsing*** the selected pairs in rapid succession. The controller is also configured to resolve in time and ***separately correlate*** detected fluorescence levels resulting from sequential transmission of the first and second ultraviolet wavelengths to determine a differential absorption level. As recited claim 1 ***both*** the first and second wavelengths selected to fluoresce the aromatic protein. As further recited in claim 1, the first and second ultraviolet wavelengths are separated by no more than approximately five nanometers.

Lee has been cited by the examiner for use of differential absorption and the use of closely spaced wavelengths, however Applicant respectfully disagrees with this interpretation of Lee. Applicant's claim 28 distinguishes over the Lee, as well as the other cited references, at least by:

1) the use of a ***two step process*** to initially detect the presence of an aromatic protein using a range of wavelengths and then further refine the detection with a ***selected pair*** of closely spaced wavelengths; and

2) the fluorescing of the detected aromatic protein alternately with the selected wavelengths by ***sequentially pulsing*** the pairs of laser diodes in rapid succession;

3) the ***alternate fluorescing*** of the detected aromatic protein separately, with two closely spaced wavelengths;

4) the use of the differential absorption level of the pairs of closely spaced wavelengths to offset the effects of atmospheric absorption; and

5) the selection of the pair of closely spaced wavelengths having a difference of less than approximately five nanometers based on the initially detected aromatic protein.

In Applicant's claim 28, the ***sequential*** pulsing of the selected pairs of laser diodes ***alternately*** generates the first and second wavelengths. In other words, the first and second wavelengths are ***generated at different times*** – not concurrently. This allows fluorescence levels from the first and second wavelengths to be resolved in time and ***separately*** correlated. This time-correlation approach is not taught, suggested or motivated by any of the cited references.

Applicant's claim 28 also recites that the wavelengths used to alternately excite the aromatic protein are less than approximately five nanometers apart. Because of this close spacing and the alternate pulsing of the different wavelengths, the time delay with respect to the excitation peak and the difference in the fluorescence decay time constant can be used to accurately identify the relative differences between the two fluorescence signals. This provides for a more accurate detection of the aromatic protein level because, among other things, it reduces the effects of atmospheric absorption.

None of this is taught, suggested or motivated by Lee, either separately, or in combination with one or more of the other references. In Lee, a single wavelength in the 355 nm range is used to excite airborne agents (see Lee paragraphs [0033] through [0036], and paragraph [0084]). Other wavelengths in Lee are used for detection the backscatter (see Lee paragraphs [0071] and [0075]). In Lee, two closely spaced wavelengths are never both used to excite an

airborne agent. Separate wavelengths are used for atmospheric measurements (see Lee paragraphs [0083] and [0084]). Only the wavelengths in the 340 to 360 nm range induce fluorescence (see, for example, claim 12 of Lee), however Lee never separately generates two wavelengths in the 340 to 360 nm range to separately induce fluorescence.

Applicant's claim 28 furthermore recites that an initial detection using a range of wavelengths is performed. The differential pair of wavelengths is then selected based on the initial detection. The differential pair of wavelengths is used to fluoresce the detected protein. Applicant's differential pair of wavelengths is separated by no more than five nanometers so that ***both wavelengths separately*** fluoresce the detected aromatic protein and to reduce the effects of atmospheric absorption. This is not the case in Lee.

In view of the above, Applicant submits that the rejection of claim 28 under 35 U.S.C. § 103(a) has been overcome and that claim 28 is in condition for allowance. Claim 31 has recitations similar to those of claim 28 are for similar reasons is believed be allowable. Claims 29, 30, 32 and 33 are believed to be allowable at because of their dependency on either claim 28 or 31.

Claims 29 and 32, for example, further distinguish over Lee by reciting that the calibrated wavelength offset is selected so that ***both*** the first and second ultraviolet wavelengths have ***similar*** atmospheric absorption levels. As discussed above, Lee never excites a single detected aromatic protein with two wavelengths separated by no more than approximately 5 nanometers. Any two wavelengths used by Lee would have significant differences in atmospheric absorption levels preventing Lee from performing an accurate time-correlation of separate fluorescence levels.

Claims 29 and 32 further distinguish over Lee by reciting that the first and second wavelengths are between approximately 270 and 340 nm. Lee ***teaches away*** from the use of these "shorter wavelengths" due to atmospheric attenuation (see Lee paragraph [0039]). To overcome this problem, Lee uses longer wavelengths (see Lee paragraph [0039]). ***Applicant's claims overcome this problem*** mentioned by Lee associated with atmospheric attenuation/absorption through the use of two-closely spaced wavelengths and the time-

correlation approach discussed above. Accordingly, the combination of Lee with any of the other cited references can not result in Applicant's claims 29 and 32.

Dai has been cited by the Examiner for disclosing a plurality of diodes in an array. In view of the above discussion, Applicant submits that the combination of Lee and Dai do not result in Applicant's claims 28 – 33. Note that Dai does not teach, suggest or motivate the alternate generation of first and second ultraviolet wavelengths by sequentially pulsing of laser diodes in rapid succession to generate separate wavelengths which are both selected to fluoresce an aromatic protein. Dai furthermore does not teach, suggest or motivate the time-correlation of detected fluorescence levels resulting from separate sequential transmission of first and second ultraviolet wavelengths to determine a differential absorption level.

In Dai, a modulation approach is used for dialing in the light intensity. The wavelengths used in Dai ***must be sufficiently separated*** in wavelength to excite different dyes. The use of wavelengths separated by less than approximately 5 nm would excite the same dye, thus making Dai inoperative. According, the combination of Dye with any of the other cited references cannot result in Applicant's claims, as amended.

Attached is an illustration to illustrate the use of time-correlation of detected fluorescence levels resulting from alternate sequential transmission of closely spaced ultraviolet wavelengths. Note the differcnt fluorescence time decays and different shapes of the detected fluorescence levels for the different wavelengths.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested The Examiner is invited to telephone Applicant's attorney at (480) 659-3314 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: MS RCE, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 3rd day of November, 2008.

Kya Sanders
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Signature